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(54) MOBILE TERMINAL AND SLIDING MODULE AND A METHOD THEREOF

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See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

5,440,629 A 8/1995 Gray 379/433.12

2003/0103041 A1	6/2003	Nguyet et al.	345/168
2004/0027335 A1	2/2004	Lin	345/168

FOREIGN PATENT DOCUMENTS

EP	1 051 012	11/2000
TW	557 050	10/2003

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(57) **ABSTRACT**

A mobile terminal comprising a main housing, first and second sub-housings, each slidably mounted on an upper surface of the main housing such that the first and second sub-housings can slide towards each other or away from each other to open or close a predetermined region of the upper surface of the main housing, and a sliding module. The mobile terminal is structured such that the display apparatus can be opened or closed by the first and second sub-housings, and such that it is easy to operate keypads with both hands when the display apparatus is open, resulting in convenience of playing games or chatting. Additionally, the sliding module of the mobile terminal is structured such that the first and second sub-housings are interlinked with each other, which allows for easy opening and closing of the display apparatus.

18 Claims, 7 Drawing Sheets



